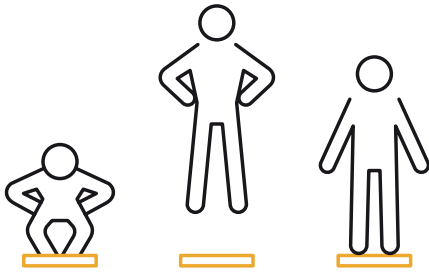


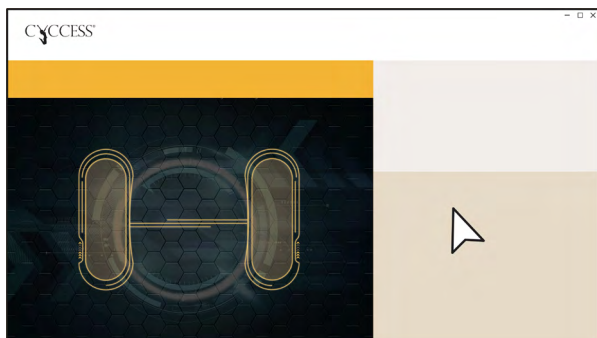
# Technology from top-elite sport.

Only in a sufficient state of recovery does the human organism react positively to training. If the recovery state is insufficient, training can lead to overload or even health risks. Current medical fatigue research has not yet been able to develop any meaningful measures that describe a complex recovery state.

**With our CYCCCESS technology, we are able to solve this central problem for athletic training – the exact determination of the current state of recovery or fatigue. Thus, we have created the most essential basis for a maximally effective training.**



Our method for determining fatigue states is based on repeated muscle power measurements using jumps on a force plate that we developed. A jump is a natural movement. Almost the entire musculature is stressed. The nerve-muscle system is stressed differently in different forms of jumping. These differences are measured with about 100 parameters per jump. Our algorithm calculates 3 neuromuscular basic parameters from these individual **measurement parameters**:



**Force potential** describes the available physiological potential (number of recruitable motor units) and the energetic state of the muscles (catabolic or anabolic metabolism). A fall in the force potential indicates muscle tiredness (catabolic state) or a reduction in the physiological recruitable motor units. An improvement in the force potential indicates an increase in strength.



**Stiffness** describes the ability of the muscle/tendon system to absorb elastic energy. This is highly dependent on the overall state of recovery. The stiffness will drop if the amount of training is excessive or if using an incorrect load rhythm – this is a protective mechanism to protect the muscles against injury.



**Muscle activation** describes the ability to activate the muscles via the nervous system – the recruitment and firing of motor units. Muscle activation is an important stress indicator. Stress reduces muscle activation and prolongs the regeneration period. Based on the muscle activation, it is possible e.g. to differentiate whether the training load was too high or the regeneration period or regeneration quality was insufficient.

No norm data is used for these calculations, only current and historical data of the test person. The 3 neuromuscular basic variables are combined into a resulting factor – **the training capacity**, which describes the current total body recovery state. The exact amount and direction of the training are derived from this.

*The test procedure was evaluated with more than one hundred thousand measurements in elite sports. In February 2020, the European Patent Office confirmed the novelty of the method.*